

Commonwealth of Pennsylvania.

DEPARTMENT OF AGRICULTURE, DAIRY AND FOOD DIVISION

BULLETIN No. 216

CHEAP CONFECTIONERY

ANALYSES MADE BY

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N. B. CRITCHFIELD, *Secretary of Agriculture*

JAMES FOUST, *Dairy and Food Commissioner*

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LETTER OF TRANSMITTAL.

Harrisburg, Pa., *December 1, 1911.*

Hon. N. B. Critchfield, Secretary of Agriculture:

Dear Sir: I have the honor to submit herewith a report by Professor Charles H. LaWall, Chemist to the Dairy and Food Division of the Department of Agriculture, presenting the results of a recent investigation upon the quality, as respects conformity to the Food Act of May 13th, 1909, of the cheap confectionery sold in this Commonwealth. In view of the wide public interest in the subject, I recommend that it be published as a Bulletin of this Division.

I have the honor to remain,

Very respectfully,

JAMES FOUST,
Dairy and Food Commissioner.



PREFACE.

In view of the great and growing consumption of confectionery by the people of this country, and especially by children, the question of the wholesomeness of confectioners' wares is of interest to every citizen. The following report, covering a wide range of the cheaper confections, such as are bought chiefly by children, exhibits a marked improvement in the character of the ingredients used by the manufacturers. This is a matter for congratulation to all concerned. The findings reported indicate, however, that there is room for great improvement in the manner in which these products are kept and exposed for sale.

N. B. CRITCHFIELD,
Secretary of Agriculture.



Philadelphia, Pa., December 1, 1911.

James Foust, Dairy and Food Commissioner, Harrisburg, Pa.:

Dear Sir: I submit herewith the result of my investigations of a number of candy samples collected by Agents Banzhoff, Cassidy and Linton in various parts of the State of Pennsylvania. Purchases were made in more than thirty counties and comprised a range of varieties of the cheaper grades of candy known as "penny specialties," which range was purposely made as complete as possible in order to ascertain whether or not cheap candies as sold in the State of Pennsylvania are in compliance with the law which specifically prohibits a number of harmful ingredients.

So far as these investigations are concerned, and I have endeavored to make them as complete as possible, I am pleased to report that out of more than two hundred and fifty samples examined, only four were found to contain substances specifically prohibited by law, and so far as harmful ingredients are concerned I believe that the penny candies at the present time stand upon the same high plane in this State as do many other food products in which a great improvement in quality has been brought about by a fearless and continual enforcement of the laws and by the widespread publicity which has always been given to such forms of adulteration as have been discovered and prosecuted in the past.

In taking up the work, I was first led to examine the literature on the subject, and I found that the most extensive investigation of which any published results were available, was that undertaken by the U. S. Department of Agriculture in 1892 under the direction of Dr. H. W. Wiley, Chief Chemist, and published as Part VI of Bulletin No. 13 of the Department.

In this Bulletin are detailed the analyses of 250 samples purchased in different parts of the United States but the results, upon close examination, are found to be rather disappointing, as no specific tests seem to have been made for such substances as saccharin, sulphurous acid, etc., while the main details as reported are concerned with the amount of sucrose, reducing sugars, water and ash, the last factor alone having any specific bearing upon the question of adulteration. I therefore decided to confine my labors to the search for such substances as are specifically prohibited by law and to ignore the unimportant details as to the relative amounts of sucrose, dextrose, etc., which merely indicate the relative proportion of cane sugar and glucose used in the manufacture of candy or the temperature at or length of time which it has been cooked.

The first factor concerning which notes have been made in every instance, is that of the appearance of the sample. In my experience of many hundreds of samples examined, I have been impressed with

the fact that the candy is often in a filthy and unwholesome condition. This is due to the sticky character of the surface of many varieties, and the fact that the cheap candies as sold by street vendors are exposed to dust and dirt, often without any covering or protection. The blame for any condition of this kind meriting condemnation most frequently lies with the retailer, although in some few instances I have been shocked by the state of the goods in an unopened package purchased from the jobber as coming directly from the manufacturer. It is optional, of course, with the purchaser, whether he will accept goods of this kind or not; but when the purchaser is a child who is too young to notice or care whether the candy is clean or dirty, the moral responsibility undoubtedly rests with the retailer, and the sale of dirty candies should, therefore, be made punishable by law.

I commend most heartily the practice of a number of manufacturers of wrapping each retailing piece of candy in waxed paper, which effectually protects it from dirt and insures its reaching the consumer in a satisfactory and sanitary condition. While it is not possible to do this in every case, the proportion could be greatly increased. In this investigation, 40 out of 259 samples were thus protected.

At the same time that notes were made concerning the appearance, portions of the candy were weighed and the results calculated so as to express the amount received in ounces for 1 cent. The variation in this respect will be found remarkable, ranging from .21 to 2.11, indicating a cost to the consumer of from 76 cents a pound down to $7\frac{1}{2}$ cents a pound.

The presence of talc, terra alba or similar insoluble earthy materials was specifically sought in each sample. With the exception of three samples in which small amounts of talc had been used in polishing the goods, no evidence of these adulterants was found, nor have I ever found any candy which contained notable quantities of such earthy matter, a condition which is contrary to the popular impression regarding cheap candies.

Tests were made of each sample for the presence of sulphur dioxide. It will be remembered that about five years ago, when bleached glucose was used that had been deprived of its color by the use of sulphur dioxide, comparatively large amounts of this harmful constituent was allowed to remain in the glucose, which, being used to a considerable extent in the making of candy, thereby contaminated this article. Of several hundred samples examined in 1905, at least 90 per cent. contained sulphur dioxide. It will also be remembered that a year ago a number of samples collected in the Philadelphia market were found to be contaminated with small amounts of sulphur dioxide, which at that time came from the use of bleached gela-

tin or glue used in the manufacture of candy. The difference between gelatin and glue is merely one of quality, both being derived from similar sources, and it is impossible to detect the difference in a made up sample of candy by any chemical tests. I speak with knowledge, however, when I assert that glue has been used by unscrupulous manufacturers in place of gelatin, for I possess samples of the product, dark brown in color and as offensive as any article used for the most technical purpose. This product was found in actual use in the manufacture of candy, and I have examined samples of so called gelatin which contained nearly one-half per cent. of sulphur dioxide, indicating either gross carelessness in manufacture or an origin of unspeakable offensiveness requiring heroic antiseptic measures.

The result of these examinations for sulphur dioxide showed that a notable and commendable change has come over the situation, for in only a single sample was a detectable amount found.

The statement has frequently been made that candies sometimes contain saccharin as an added sweetening agent, or that preservatives such as salicylic or benzoic acids are occasionally used. I have never fully credited these allegations, and a careful examination of every sample in this respect revealed the fact that none of these substances was present.

Tests were made of the coloring matter where present in sufficient amount, to ascertain whether it was of coal tar origin or vegetable origin and whether any but the colors in the permitted list were used. In this connection I can say that no instance was found in which any but the authorized colors were used when single colors were present. Where a mixture or a number of colors occurred in the same piece of striped candy no attempt was made to effect a separation, as the extra labor would have unnecessarily prolonged the work. It is gratifying to note that the use of Venetian red, burnt umber, and similar mineral pigments, which were occasionally found several years ago in cheap chocolate confections, has been entirely discontinued.

An investigation was also made of the character of the fat found in chocolate coated candies or candies composed largely of chocolate to ascertain the prevalence of the substitution of foreign fats for chocolate. A few instances were found where this substitution had undoubtedly taken place, while a few others had to be classed as doubtful, owing to the insufficiency of material with which to work as the coating of chocolate is often so thin on the cheaper grades of candy that several pounds of the candy are necessary in order to obtain enough of the fat to examine. In this connection I would state that the fault for any deception in this respect probably rests with the manufacturer, for I have observed in a number of instances where

I have had original packages of supposedly chocolate coated penny specialties, that the manufacturer is careful to omit the use of the word chocolate, either on the label of the box or on the bill, while the retailer who judges by external appearances only and who has probably ordered chocolate coated goods, sells the articles in ignorance of the fact that a technical offence has been committed in selling such goods for chocolate goods.

The following descriptions of the articles as tabulated have been as brief as is consistent with proper identification of the sample. Trade marked names or designations have been purposely avoided in order that the information contained in this Bulletin might not be put to improper use. The tabulated results are herewith appended:

CHEAP CONFECTIONERY

TABULATED RESULTS

TABULATED

Agent's number.	Kind of Candy.	Oz. average for 1 cent.	Appearance.	Color.
4358	Suckers, -----	1.23	Good, ----	Coal tar, ----
4359	Chocolate coated marshmallow squares with nut on each, -----	0.67	Fair, ----	None, -----
4360	Marshmallow blocks, chocolate coated, -----	0.88	Good, ----	Coal tar, ----
4361	Chocolate coated peanut bars, -----	0.67	Inferior, --	None, -----
4362	Marshmallow revolvers, -----	0.78	Inferior, --	None, -----
4363	Candy eggs, -----	0.60	Good, ----	Coal tar, ----
4364	Marshmallows, -----	0.60	Good, ----	None, -----
4365	Butterscotch, -----	0.85	Good, ----	None, -----
4366	Chocolate discs, -----	0.81	Good, ----	None, -----
4367	Chocolate cigars, -----	0.56	Inferior, --	None, -----
4368	Chocolate creams, -----	0.67	Good, ----	None, -----
4369	Chocolate coated eggs, -----	0.64	Good, ----	None, -----
4370	Chocolate chips, -----	0.71	Good, ----	None, -----
4371	Marshmallow rabbits, -----	0.81	Inferior, --	Coal tar, ----
4372	Chocolate covered caramels, -----	0.71	Good, ----	None, -----
4373	Candy strawberries, -----	0.60	Good, ----	Coal tar, ----
4374	Caramels, -----	0.99	Good, ----	Vegetable, ----
4375	Marshmallow sbortcake, -----	0.71	Good, ----	Coal tar, ----
4376	Date balls, -----	1.27	Good, ----	None, -----
4377	Chocolate fudge, -----	0.88	Good, ----	None, -----
4378	Marshmallow fruit, -----	0.49	Good, ----	Coal tar, ----
4379	Chocolate bars, -----	0.88	Good, ----	None, -----
4380	Marshmallow sandwich, -----	0.67	Good, ----	Coal tar, ----
4381	Nougat, -----	0.92	Good, ----	None, -----
4382	Orange bars, -----	1.05	Good, ----	Coal tar, ----
4383	Candy potatoes, -----	1.09	Inferior, --	None, -----
4384	Marshmallow babies, -----	0.96	Inferior, --	Coal tar, ----
4385	Cocoanut candy, -----	0.95	Good, ----	None, -----
4386	Stick candy, -----	1.05	Good, ----	Coal tar, ----
4387	Caramels, -----	1.05	Good, ----	None, -----
4388	Marshmallow candy, -----	0.64	Inferior, --	Coal tar, ----
4389	Marshmallow fish, -----	0.74	Inferior, --	Coal tar, ----
4390	Sour balls, -----	1.05	Good, ----	Coal tar, ----
4391	Candy eggs, -----	0.81	Good, ----	None, -----
4392	Suckers, -----	0.85	Inferior, --	None, -----
4393	Marshmallow bananas, -----	0.59	Inferior, --	Coal tar, ----
4394	Chocolate rabbits, -----	1.09	Inferior, --	None, -----
4395	Candy beans, -----	0.71	Good, ----	Vegetable, ----
4396	Chocolate wafers, -----	0.67	Good, ----	None, -----
4397	Raspberry candy, -----	0.81	Good, ----	Coal tar, ----
4398	Red candy blocks, -----	0.56	Good, ----	Coal tar, ----
4399	Chocolate coated molasses candy, -----	1.34	Inferior, --	None, -----
4400	Chocolate caramel rolls, -----	0.64	Good, ----	None, -----
4401	Suckers, -----	0.39	Good, ----	Coal tar, ----
4402	Cream candy, -----	0.88	Good, ----	None, -----
4403	Candy marbles, -----	0.81	Good, ----	None, -----
4404	Lime candy, -----	0.56	Good, ----	Vegetable, ----
4405	Caramels, -----	0.59	Good, ----	None, -----
4406	Cream candy balls, -----	1.09	Good, ----	None, -----
4407	Candy pans, -----	0.42	Good, ----	Coal tar, ----
4408	Gum drops, -----	0.95	Good, ----	Coal tar, ----
4409	Sugar cakes, -----	1.16	Good, ----	None, -----
4410	Candy rabbits, -----	1.62	Good, ----	None, -----
4411	Candy loaf, -----	0.35	Good, ----	None, -----
4412	Jelly eggs, -----	0.28	Good, ----	Coal tar, ----
4413	Kisses, -----	0.60	Good, ----	None, -----
4414	Fudge, -----	0.81	Good, ----	None, -----
4415	Peanut candy, chocolate coated, -----	0.64	Good, ----	None, -----
4416	Kisses, -----	0.81	Good, ----	None, -----
4417	Butterscotch, -----	0.90	Good, ----	None, -----
4418	Clear gum drops, -----	0.32	Good, ----	Coal tar, ----
4419	Candy loaf, -----	0.39	Good, ----	None, -----
4420	Fudge, -----	1.10	Good, ----	None, -----
4421	Chocolate bars, -----	0.71	Good, ----	None, -----

RESULTS.

Talc, terra alba, saccharin, benzoic or salicylic acid, sulphur dioxide.	Chocolate fat.	Remarks.
None, -----	-----	Wrapped in waxed paper.
None, -----	O. K., -----	Some of the nuts were wormy; gelatin present.
None, -----	Cocoanut fat present.	Gelatin present.
None, -----	O. K., -----	Membranous hulls of nuts present and many of the nuts wormy.
None, -----	Tallow present,--	Surface of candy very dirty; gelatin present.
None, -----	-----	Gelatin present.
None, -----	-----	Gelatin present.
None, -----	-----	Wrapped in waxed paper.
None, -----	O. K. -----	-----
None, -----	O. K., -----	Very badly worm eaten.
None, -----	O. K. -----	-----
None, -----	O. K. -----	-----
None, -----	O. K. -----	-----
None, -----	O. K. -----	Surface of candy very dirty.
None, -----	O. K. -----	-----
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Contained traces of a non-resinous astringent glaze.
None, -----	-----	Gelatin present.
None, -----	Tallow present.	-----
None, -----	-----	Gelatin present.
None, -----	-----	-----
None, -----	-----	Appearance very dirty.
None, -----	-----	Appearance very dirty; odor glue-like.
None, -----	-----	-----
None, -----	-----	Wrapped in waxed paper.
None, -----	-----	Wrapped in waxed paper.
None, -----	-----	Very dirty; strongly flavored with ethereal flavor.
None, -----	-----	Very dirty; excessively colored and strongly flavored with ethereal flavor.
None, -----	-----	-----
None, -----	O. K., -----	Very dirty and mussy.
None, -----	-----	Appearance very dirty; very strongly flavored with ethereal flavor.
None, -----	-----	Very dirty and mussy.
None, -----	O. K. -----	-----
None, -----	-----	Very highly colored; ethereal flavor present.
None, -----	-----	-----
None, -----	Cocoanut fat present.	Very messy and dirty in appearance.
None, -----	-----	Paper wrapped.
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Small tin pan containing candy.
None, -----	-----	Ethereal flavor present.
None, -----	-----	-----
None, -----	-----	Each piece wrapped in tinfoil.
None, -----	-----	Each cent's worth in waxed paper bag.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	Tallow present.	-----
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	-----
None, -----	-----	Sample contained traces of a resinous glaze.
None, -----	-----	Sample contained traces of a resinous glaze.
None, -----	O. K. -----	-----

Agent's number.	Kind of Candy.	Oz. average for 1 cent.	Appearance.	Color.
4422	Red candy beans, -----	0.64	Good, -----	Coal tar, -----
4423	Mixed candy, -----	1.05	Inferior, ---	Coal tar, -----
4424	Mixed candy, -----	0.81	Inferior, ---	Coal tar, -----
4425	Suckers, -----	0.88	Good, -----	Coal tar, -----
4426	Candy eggs, -----	0.85	Good, -----	Coal tar, -----
4427	Marshmallow cones, -----	0.46	Fair, -----	Coal tar, -----
4428	Prize box, -----	0.39	Good, -----	Coal tar, -----
4429	Cocoanut blocks, -----	0.92	Good, -----	Coal tar, -----
4430	Licorice babies, -----	0.81	Good, -----	Carbon black, ---
4431	Cherry candy, -----	1.6	Good, -----	Coal tar, -----
4432	Molasses blocks, -----	1.2	Good, -----	None, -----
4433	Cream taffy, -----	0.78	Good, -----	None, -----
4434	Prize package, -----	0.32	Good, -----	None, -----
4435	Strawberry candy, -----	0.84	Good, -----	Coal tar, -----
365	Strawberry candy, -----	1.59	Good, -----	Coal tar, -----
4436	Mixed candy, -----	1.11	Inferior, ---	Coal tar, -----
4437	Chocolate cigars, -----	0.66	Good, -----	None, -----
4438	Chocolate marshmallows, -----	0.53	Fair, -----	None, -----
4439	Licorice tubes, -----	0.78	Fair, -----	Carbon black, ---
4440	Caramels, -----	1.02	Good, -----	None, -----
4441	Suckers, -----	1.37	Good, -----	None, -----
4442	Peanut candy, -----	0.92	Good, -----	None, -----
4443	Candy bars, -----	0.81	Good, -----	None, -----
4444	Marshmallows, -----	0.53	Good, -----	None, -----
4445	Jelly eggs, -----	1.05	Good, -----	Coal tar, -----
4446	Marshmallows, -----	0.53	Inferior, ---	None, -----
4447	Candy pies, -----	0.35	Inferior, ---	Coal tar, -----
4448	Orange candy, -----	1.09	Good, -----	Coal tar, -----
4449	Suckers, -----	0.63	Inferior, ---	Carbon black, ---
4450	Cocoanut candy, -----	1.09	Fair, -----	Coal tar, -----
4451	Chewing candy, -----	0.35	Good, -----	None, -----
4452	Marshmallows, -----	0.53	Good, -----	None, -----
4453	Nut fudge, -----	0.64	Good, -----	None, -----
4454	Mixed candy, -----	1.6	Inferior, ---	Coal tar, -----
4455	Marshmallows, -----	0.63	Good, -----	None, -----
4456	Marshmallow pears, -----	1.02	Good, -----	Coal tar, -----
4457	Marshmallows, -----	1.6	Inferior, ---	None, -----
4458	Candy bags, -----	1.0	Good, -----	None, -----
4459	Marshmallow bananas, -----	0.78	Good, -----	Coal tar, -----
4460	Chocolate fish, -----	0.88	Inferior, ---	None, -----
4461	Chocolate fudge, -----	1.6	Good, -----	None, -----
4462	Chocolate slabs, -----	0.78	Inferior, ---	None, -----
4463	Marshmallows, -----	0.84	Inferior, ---	Coal tar, -----
4464	Marshmallow rolls, -----	0.84	Good, -----	Coal tar, -----
4465	Nut fudge, -----	1.6	Inferior, ---	None, -----
4466	Prize boxes, -----	0.21	Good, -----	Coal tar, -----
4467	Marshmallows, -----	0.59	Inferior, ---	None, -----
4468	Chocolate fudge, -----	1.6	Inferior, ---	None, -----
4469	Sour balls, -----	0.74	Good, -----	Coal tar, -----
4470	Strawberry rolls, -----	1.05	Good, -----	Coal tar, -----
4472	Marshmallows, -----	0.71	Inferior, ---	None, -----
4473	Mixed candy, -----	0.81	Inferior, ---	Coal tar, -----
4474	Strawberry marshmallows, -----	0.91	Good, -----	Coal tar, -----
4475	Red candy blocks, -----	2.11	Good, -----	Coal tar, -----
4476	Suckers, -----	0.98	Good, -----	Coal tar, -----
4477	Marshmallow babies, -----	0.71	Fair, -----	Coal tar, -----
4478	Strawberry candy, -----	0.35	Inferior, ---	Coal tar, -----
4480	Molasses popcorn, -----	0.56	Good, -----	None, -----
4481	Nut fudge, -----	0.59	Good, -----	None, -----
4482	Marshmallow bananas, -----	0.71	Inferior, ---	Coal tar, -----
4483	Candy bows, -----	0.49	Good, -----	Coal tar, -----
4484	Mixed candy, -----	1.59	Inferior, ---	Coal tar, -----
4485	Marshmallows, -----	0.80	Inferior, ---	None, -----
4486	Chocolate bars, -----	0.85	Good, -----	None, -----
4487	Marshmallow biscuits, -----	1.02	Good, -----	Coal tar, -----
4488	Marshmallow bananas, -----	0.92	Good, -----	Coal tar, -----

TABULATED

Agent's number.	Kind of Candy.	Oz. average for 1 cent.	Appearance.	Color.
4489	Chocolate fudge, -----	0.78	Inferior, ---	None, -----
4490	Gum drops, -----	0.64	Good, -----	Coal tar, -----
4491	Jelly beans, -----	0.78	Good, -----	Coal tar, -----
4492	Licorice cigarettes, -----	0.71	Good, -----	Carbon black, -----
4493	Cinnamon drops, -----	0.78	Good, -----	Coal tar, -----
4494	Chocolate drops, -----	0.81	Inferior, ---	None, -----
4495	Candy peaches, -----	0.81	Good, -----	Coal tar, -----
4496	Marshmallow bananas, -----	0.95	Inferior, ---	Coal tar, -----
4497	Marshmallow blocks, -----	0.85	Good, -----	Coal tar, -----
4498	Marshmallows, -----	0.81	Good, -----	None, -----
4499	Candy balls, -----	1.02	Good, -----	Vegetable, -----
4500	Candy pears, -----	1.12	Good, -----	Coal tar, -----
4501	Suckers, -----	0.92	Good, -----	None, -----
4502	Marshmallow fish, -----	0.60	Inferior, ---	None, -----
4503	Chocolate drops, -----	1.60	Inferior, ---	None, -----
4504	Chocolate cigarettes, -----	0.71	Good, -----	None, -----
4505	Orange candy, -----	0.85	Good, -----	Vegetable, -----
4506	Chocolate babies, -----	0.88	Inferior, ---	None, -----
4507	Candy shortcake, -----	0.92	Good, -----	Coal tar, -----
4508	Bonbons, -----	1.05	Good, -----	Vegetable, -----
4509	Marshmallow bananas, -----	1.23	Good, -----	Coal tar, -----
4510	Marshmallow bars, -----	0.71	Good, -----	Coal tar, -----
4511	Strawberry candy, -----	0.59	Good, -----	Coal tar, -----
4512	Chocolate pipes, -----	0.81	Good, -----	None, -----
4513	Candy babies, -----	0.59	Inferior, ---	Coal tar, -----
4514	Cocoanut balls, -----	1.00	Good, -----	Coal tar, -----
4515	Chocolate dogs, -----	1.12	Inferior, ---	None, -----
4516	Marshmallow slabs, -----	0.71	Good, -----	Coal tar, -----
4517	Mixed candy, -----	1.60	Inferior, ---	Coal tar, -----
4518	Candy berries, -----	0.95	Good, -----	Coal tar, -----
4519	Toasted marshmallows, -----	0.88	Inferior, ---	None, -----
4520	Prize bags, -----	0.31	Good, -----	Coal tar, -----
4521	Mixed candy, -----	0.81	Good, -----	Coal tar, -----
4522	Candy beans, -----	0.81	Good, -----	Coal tar, -----
4523	Candy bananas, -----	0.81	Good, -----	Coal tar, -----
4524	Cocoanut marshmallows, -----	0.78	Good, -----	None, -----
4525	Orange blocks, -----	0.78	Good, -----	Coal tar, -----
4526	Candy balls, -----	0.74	Good, -----	Coal tar, -----
4527	Chocolate creams, -----	0.81	Inferior, ---	None, -----
4528	Salt water taffy, -----	0.95	Good, -----	Coal tar, -----
4529	Candy oranges, -----	1.09	Good, -----	Coal tar, -----
4530	Candy berries, -----	0.99	Good, -----	Coal tar, -----
4531	Candy plates, -----	0.78	Fair, -----	Coal tar, -----
4532	Fudge, -----	0.84	Good, -----	None, -----
4533	Chocolate drops, -----	1.05	Inferior, ---	None, -----
4534	Marshmallow slabs, -----	1.30	Inferior, ---	Vegetable, -----
4535	Marshmallow slabs, -----	0.42	Inferior, ---	Coal tar, -----
4536	Candy sandwiches, -----	0.53	Inferior, ---	None, -----
4537	Marshmallows, -----	0.92	Inferior, ---	None, -----
4538	Candy carrots, -----	0.63	Good, -----	Coal tar, -----
4539	Candy cones, -----	0.46	Good, -----	None, -----
4540	Orange candy, -----	0.88	Good, -----	Vegetable, -----
4541	Candy bananas, -----	0.63	Good, -----	Coal tar, -----
4542	Mixed candy, -----	0.78	Good, -----	Coal tar, -----
4543	Marshmallows, -----	0.71	Good, -----	Coal tar, -----
4544	Orange candy, -----	1.15	Good, -----	Coal tar, -----
4545	Suckers, -----	0.99	Good, -----	Coal tar, -----
4546	Fudge, -----	1.58	Inferior, ---	None, -----
4547	Cocoanut candy, -----	2.1	Inferior, ---	Coal tar, -----
4548	Marshmallow rolls, -----	0.60	Inferior, ---	None, -----
4549	Candy dogs, -----	0.64	Good, -----	Coal tar, -----
4550	Candy licorice strips, -----	0.85	Good, -----	Carbon black, -----
4551	Candy licorice strips, -----	0.71	Good, -----	Carbon black, -----
4552	Mint sticks, -----	1.05	Good, -----	Coal tar, -----
4553	Chocolate rabbits, -----	0.74	Inferior, ---	None, -----

RESULTS—Continued.

Talc, terra alba, saccharin, benzoic or salicylic acid, sulphur dioxide.	Chocolate fat.	Remarks.
None, -----	-----	Very dirty.
None, -----	-----	-----
Talc present, -----	-----	Talc present in the coating.
None, -----	-----	Oil anise flavor.
None, -----	-----	Excessively colored.
None, -----	O. K., -----	Very dirty.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Gelatin present; ethereal flavor present; very dirty and mussy.
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Gelatin present; odor glue-like.
Sulphur dioxide present, -----	-----	SO ₂ present in appreciable amount.
None, -----	-----	Very dirty.
None, -----	O. K., -----	Very dirty.
None, -----	O. K., -----	In paper wrapper.
None, -----	-----	-----
None, -----	Cocoanut fat present, -----	Very mussy.
None, -----	-----	Gelatin present.
None, -----	-----	-----
None, -----	-----	Gelatin present; ethereal flavor present; coal tar color excessive.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	O. K., -----	Gelatin present.
None, -----	-----	Gelatin present; odor glue-like; ethereal flavor present; very dirty.
None, -----	-----	-----
None, -----	O. K., -----	Very mussy.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Very dirty.
None, -----	-----	-----
None, -----	-----	Very dirty.
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Gelatin present; ethereal flavor present.
None, -----	-----	Gelatin present; ethereal flavor present.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Gelatin present.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Very dirty and mussy.
None, -----	-----	Each piece in waxed paper.
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Some pieces dirty.
None, -----	-----	-----
None, -----	-----	Sample was dirty.
None, -----	-----	Sample was dirty.
None, -----	-----	Gelatin present; odor glue-like; sample was dirty.
None, -----	-----	Gelatin present; sample was very dirty.
None, -----	-----	Gelatin present; odor glue-like; sample was dirty.
None, -----	-----	-----
None, -----	-----	-----
None, -----	-----	Gelatin present; ethereal flavor present.
None, -----	-----	Gelatin present.
None, -----	-----	Gelatin present; ethereal flavor present in excessive amount.
None, -----	-----	Gelatin present.
None, -----	-----	Gelatin present.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Very mussy and dirty.
None, -----	-----	Sample very dirty.
None, -----	-----	Sample very dirty.
None, -----	-----	Gelatin present.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Aniseed flavor present.
None, -----	-----	-----
None, -----	(?) -----	Very dirty.

TABULATED

Agent's number.	Kind of Candy.	Oz. average for 1 cent.	Appearance.	Color.
4554	Taffy and licorice, -----	0.88	Good, -----	Carbon black,--
4555	Marshmallows, -----	0.67	Good, -----	Coal tar, -----
4556	Chewing candy, -----	0.99	Good, -----	None, -----
4557	Candy bananas, -----	0.64	Good, -----	Coal tar, -----
4558	Nougat, -----	0.92	Good, -----	None, -----
4559	Prize candy, -----	0.49	Good, -----	Vegetable, -----
4560	Cocoanut bars, -----	1.15	Good, -----	Coal tar, -----
4561	Kisses, -----	1.23	Good, -----	None, -----
4562	Caramels, -----	0.81	Inferior, -----	None, -----
4563	Kisses, -----	0.81	Good, -----	None, -----
4564	Taffy, -----	0.74	Good, -----	None, -----
4565	Chocolate babies, -----	0.63	Good, -----	None, -----
4566	Peanut blocks, -----	0.95	Good, -----	None, -----
4567	Kisses, -----	1.05	Good, -----	None, -----
4568	Chocolate caramel sticks, -----	0.59	Good, -----	None, -----
4569	Chocolate sticks, -----	0.49	Inferior, -----	None, -----
4570	Candy bananas, -----	0.74	Good, -----	Coal tar, -----
4571	Licorice sticks, -----	0.59	Good, -----	Carbon black,--
4572	Licorice drops, -----	0.49	Good, -----	Carbon black,--
4573	Candy cigarettes, -----	0.53	Good, -----	None, -----
4574	Kisses, -----	1.38	Good, -----	None, -----
4575	Licorice sticks, -----	1.59	Good, -----	Carbon black,--
4576	Candy fish, -----	0.85	Inferior, -----	Coal tar, -----
4577	Kisses, -----	1.19	Good, -----	None, -----
4578	Candy cherries, -----	1.33	Good, -----	Coal tar, -----
4579	Prize package, -----	0.39	Good, -----	Vegetable, -----
4580	Candy beads, -----	0.49	Good, -----	Coal tar, -----
4581	Chocolate drops, -----	1.05	Inferior, -----	None, -----
4582	Kisses, -----	0.78	Good, -----	None, -----
4583	Fudge, -----	1.59	Good, -----	None, -----
4584	Licorice beans, -----	1.59	Good, -----	Carbon black,--
7391	Chocolate taffy, -----	0.78	Good, -----	None, -----
7392	Marshmallows, -----	0.46	Good, -----	Coal tar, -----
7393	Assorted candy drops, -----	1.09	Good, -----	Vegetable, -----
7394	Candy bananas, -----	0.88	Inferior, -----	Coal tar, -----
7395	Raspberry drops, -----	0.56	Good, -----	Vegetable, -----
7396	Marshmallow fruit, -----	0.85	Inferior, -----	None, -----
3301	Peanut candy, -----	0.81	Good, -----	None, -----
3302	Marshmallows, -----	0.74	Good, -----	None, -----
3303	Candy bananas, -----	0.71	Good, -----	Coal tar, -----
3304	Marshmallows, -----	0.85	Good, -----	Coal tar, -----
3305	Chocolate marshmallows, -----	0.56	Inferior, -----	None, -----
3306	Chocolate slabs, -----	0.71	Good, -----	None, -----
3307	Kisses, -----	0.71	Good, -----	None, -----
3308	Candy sticks, -----	0.67	Inferior, -----	Coal tar, -----
3309	Licorice sticks, -----	1.48	Good, -----	Carbon black,--
3310	Candy cakes, -----	0.49	Good, -----	Coal tar, -----
3311	Paraffin chewing gum, -----	0.42	Inferior, -----	None, -----
3312	Shortcake candy, -----	0.67	Good, -----	None, -----
3313	Kisses, -----	0.95	Good, -----	None, -----
3314	Licorice sticks, -----	0.42	Good, -----	Carbon black,--
3315	Licorice strips, -----	0.81	Good, -----	Carbon black,--
3316	Candy eggs, -----	0.19	Good, -----	Coal tar, -----
3317	Suckers, -----	1.09	Good, -----	Coal tar, -----
3318	Licorice sticks, -----	1.05	Good, -----	Carbon black,--
3319	Suckers, -----	0.74	Good, -----	None, -----
3320	Prize candy, -----	0.39	Good, -----	Coal tar, -----
3321	Strawberry candy, -----	0.53	Good, -----	Vegetable, -----
3322	Suckers, -----	0.99	Good, -----	Coal tar, -----
3323*	Licorice sticks, -----	1.37	Good, -----	Carbon black,--
3324	Kisses, -----	0.63	Good, -----	None, -----
3325	Marshmallows, -----	0.74	Good, -----	None, -----
4584	Jelly beans, -----	1.59	Inferior, -----	Coal tar, -----
4585	Jelly beans, -----	1.23	Good, -----	Coal tar, -----

*An interesting fact in connection with licorice candy is, that for years it has been the custom of manufacturers to add aniseed flavor so that the popular impression of the public at the present time is that anything flavored with anise contains licorice. The use of a carbon black color in licorice goods is due to the fact that the varying amounts of licorice extract which are used would give the products varying shades of brown and the black color is therefore added because of the popular idea that licorice candy should be black. It is also of interest to note in this connection that in some instances, while the goods are sold at retail as licorice goods, the packages or labels do not bear the word at all.

RESULTS—Continued.

Talc, terra alba, saccharin, benzoic or salicylic acid, sulphur dioxide.	Chocolate fat.	Remarks.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	-----	Gelatin present, ethereal flavor and coal tar color present in excessive amount.
None, -----	-----	In pasteboard box.
None, -----	-----	Coal tar color present in excessive amount.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	O. K., -----	Very mussy and dirty.
None, -----	-----	Each piece wrapped in paper.
None, -----	(?) -----	Slight flavor of chocolate.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	Tallow present(?)	Very dirty and wormy.
None, -----	-----	Gelatin present; ethereal flavor present in excessive amount.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Wrapped in paper.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Gelatin present; very dirty.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	In pasteboard box.
None, -----	O. K., -----	Very mussy and dirty.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Aniseed flavor present.
None, -----	O. K. -----	-----
None, -----	-----	Gelatin present; ethereal flavor present; very dirty.
None, -----	-----	Very dirty.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Gelatin present; ethereal flavor present.
None, -----	-----	Gelatin present; odor glue-like.
None, -----	O. K., -----	Very mussy.
None, -----	Tallow present(?)	-----
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Very dirty and excessively highly colored.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Very dirty.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Aniseed flavor present.
None, -----	-----	Sample in pasteboard box.
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Aniseed flavor present.*
None, -----	-----	Each piece wrapped in waxed paper.
None, -----	-----	Very dirty.
Talc present, -----	-----	Sample is coated with talc.

In the foregoing tabulation, especial attention is called to the fact that 62 of the samples, or nearly 24 per cent., were in a condition described as "dirty," and it avails but little to make a product of wholesome materials and then allow it to become contaminated with dirt before it is sold. I would also emphasize the fact that competition among manufacturers to introduce new forms and to give an apparently large amount for the money has led to the concoction of mixtures of sugar, gums, starches or flours, gelatin and water, which, while undoubtedly wholesome as individual ingredients, are nevertheless so combined as to form spongy or tenacious, slowly soluble masses, which certainly possess every appearance of being indigestible or unwholesome, taking into account the cheapness and the large amount which might be eaten by a child.

The practice of combining toys with candies or of making articles of candy which are likely to be played with for some time before being eaten, as is done in numerous instances, should also be discouraged. Such candy forms as marbles, whistles, windmills, belts and necklaces, are likely to be utilized, before eating, in ways which largely increase the chances of dangerous contamination. These forms are undoubtedly attractive to children on account of the double purpose which they serve, but there is a moral responsibility concerning the manufacture of these specialties which the maker should assume, and their manufacture and sale should be discouraged in every way possible.

It is gratifying to know that the use of the so called "ethereal" flavors is decreasing, only 21 samples out of 259 being found in which they were especially noticeable, and these mainly of the marshmallow-banana type, of which some instances were observed where the amount of flavor was excessive, presumably to cover up the glue like flavor of cheap gelatin, which flavor was plainly observed in some samples.

It is interesting also to note that there is very little evidence of the use of the resinous glazes which were so extensively employed formerly. It is true that in the class of samples examined resinous glazes are rarely necessary and in the few instances in which any evidence of their presence was found the amount was so small that it was barely recognizable. This is in strong contrast to the samples examined over a year ago in the Philadelphia district when large amounts were found. One instance is recalled of a sample purchased there in which a drachm of shellac was separated from a pound of candy. Such treatment could only be characterized as weather proofing, and it is well for the consumer that such practices have apparently been discontinued.

In summarizing the results of the foregoing examination, I would say that while marked improvement is observed in the quality of cheap candies as regards freedom from actually harmful ingredients, there is still room for great improvement in the quality of some of the ingredients used, in the form in which candies are made and sold as well as in the manner of their handling so as to keep them free from dirt.

Respectfully submitted,

CHARLES H. LaWALL.



